



## Strengthening Families, Strengthening Our Economy The economic benefits of pre-Kindergarten September 2014

Investing now in kids and families will strengthen Montana's children and families, our communities, and the state's economy. Quality, public pre-K helps parents work, reduces education costs, increases future earnings of participants, and reduces the state's spending on corrections.

Montana is currently one of only eight states not investing in its youngest learners. A high quality, public pre-K program will make us more competitive among neighboring states, benefit taxpayers, and enhance economic vitality.

### Pre-K generates a high return on investment

Every dollar invested in quality early childhood education produces a return of seven dollars down the road.<sup>1</sup> **Benefits include greater academic achievement, higher graduation rates, reduced crime, and increased earnings over a lifetime.** The 7-to-1 benefit-cost ratio comes from a long-term study of children who participated in Chicago Child-Parent Centers (CPC), a high-quality preschool program that served low-income children in Chicago's public schools. Follow-up research in the same program demonstrates even higher estimated return on investment of \$11 for every dollar invested. The HighScope Perry Preschool Program is another study of children who attended a high quality preschool program and those who did not. This program found a benefit-cost ratio of \$16 for every dollar spent.<sup>2</sup>

#### Investing in Pre-K: Economic Returns for the State

With an investment in quality pre-K programs, Montana would experience \$62 million to \$113 million in economic returns. Investing in pre-K will:

- ✓ Prepare children to succeed in kindergarten
- ✓ Support families and parents' ability to stay in the workforce
- ✓ Reduce special education costs
- ✓ Increase earnings of participants
- ✓ Reduce criminal justice system costs

States with broad-based public pre-K programs enjoy similar savings. Oklahoma started investing in universal pre-K in 1998. The return on investment for Oklahoma's program for *earnings increases alone* is three to four dollars to one dollar spent.<sup>3</sup> These findings demonstrate that high returns on investment are not limited to small, specialized programs, but are replicable by states that choose to invest in high-quality pre-K programs. There is no reason to expect Montana would not see similar results.

Although the returns on investment are generally greater for programs that target low-income children, pre-K substantially benefits all children and their families.<sup>4</sup> The total return to the economy is greater for programs that serve all kids regardless of family income, despite a lower benefit-cost ratio, because the total number of children benefitting is higher.<sup>5</sup>

## Pre-K prepares children to learn and has immediate economic benefits

### Preparing children for kindergarten results in immediate education savings

When children are better prepared to thrive in school, not only do they benefit, but their peers, teachers, and schools benefit as well.

Children who attend quality pre-K programs are more likely to enter kindergarten ready to learn.<sup>6</sup> Pre-K meaningfully improves vocabulary and early math skills.<sup>7</sup> While some opponents argue increased cognitive skills “fade over time,” research shows that when a program is designed properly, these effects do not disappear, particularly for the most disadvantaged children.<sup>8</sup> Researchers note, “cognitive gains from preschool programs are larger when programs focus on intentional teaching, small group learning, and individualized teaching one-on-one.”<sup>9</sup>

Researchers believe the greatest individual advantage of pre-K to children is the development of “soft skills,” or interpersonal skills, such as the ability to pay attention and focus, curiosity and openness to new experiences, and emotional control.<sup>10</sup> These skills advantage children throughout their lifetime, enabling success at home, in school, and in the work force. Early interpersonal skills also result in less disruption in the classroom and greater overall productivity of the school.<sup>11</sup>

**Improved cognitive skills translate to greater academic achievement and reduced educational costs later on.** Studies show pre-K results in up to a 48 percent reduction in the need for special education, and children are up to 23 percent less likely to repeat grades, saving needed school resources.<sup>12</sup> The HighScope Perry Preschool Project study compared children who attended a preschool program with children of similar socioeconomic backgrounds who did not and found significantly less need for special education: 34 percent of children in the control group needed special education services, compared to only 15 percent of those who attended the preschool.<sup>13</sup>

State-supported pre-K programs find similar immediate benefits in better preparing children to succeed in school. For example, children who participated in Tennessee’s public pre-K program were half as likely to be held back in kindergarten.<sup>14</sup>

The benefits of pre-K exceed individual success for participating children and their families. For example, teacher turnover is reduced when children are better prepared for kindergarten and school.<sup>15</sup> Schools do not need to spend as much on programs focused on improving student

#### What Is Quality Pre-K?

- ✓ Voluntary participation
- ✓ Well-qualified staff and on-going professional development
- ✓ Low child-to-caregiver ratio
- ✓ Comprehensive early learning standards
- ✓ Safe, healthy environments and regular site visits
- ✓ At least one meal per day
- ✓ Support for families and other wrap-around services

Source: National Institute for Early Education Research



achievement, as pre-K students have already gained social and academic skills necessary to succeed.<sup>16</sup>

### Strengthening families, strengthening the workforce

An investment in early childhood pays off quickly. Pre-K can help strengthen Montana's economy right away in two ways: strengthening working families and creating good-paying jobs in the childcare and early education industry.

For many Montana families, the high cost of child care can make it difficult for parents to continue working. The average cost for a four-year-old to attend child care in Montana is \$7,518 per year, roughly 13% of the average Montana family's yearly income.<sup>17</sup> For a single mother making on average \$26,000 a year, the cost of child care represents a staggering 28 percent of her income.

**Because of the high costs of childcare, many parents who would otherwise work leave their jobs, in some cases, increasing their need to rely on public assistance.<sup>18</sup>**

State investments in pre-K can help offset some of the costs of child care for working families, making work more feasible. Enabling families to work expands Montana's labor force and helps generate economic growth in the state. As more parents are able to work, tax revenues also increase, helping offset some of the costs of a pre-K program.<sup>19</sup> **Businesses also benefit, as working parents with quality, dependable child care are more productive and miss work less frequently.<sup>20</sup>**

Investing in the early childhood education means more jobs, strengthening Montana's economy. **Early childhood care and education is an important industry in Montana, with annual gross receipts of over \$140 million and employing more than 6,600 child care workers and preschool teachers.<sup>21</sup>** By comparison, early childhood care and education generates economic value at the same level as the state's dairy product industry.<sup>22</sup>

Money invested in early childhood education programs tends to stay in local communities, as employees typically do not save large portions of their earnings, but instead purchase locally.<sup>23</sup> Montana's early childhood care and education industry helps support an additional \$126.2 million in other industries in the state, and indirectly supports an additional 3,500 jobs through the purchase of local goods and services.<sup>24</sup>

### Investing in early childhood has lifelong benefits

Pre-K derives long-term benefits for children, families and communities. Most of the economic benefits and cost-savings from pre-K result from increased future earnings of participants and reduced societal costs, like those associated with criminal justice (See Figure 1).<sup>25</sup>

### Education and future earnings

Children who attend pre-K are more likely to graduate high school and attend college.<sup>26</sup> Pre-K enables children to gain both the academic and social skills they need to do well in high school and to thrive in the workforce, helping them for the rest of their lives.

Increased educational attainment increases wages and lifelong earnings. In Montana, the median annual earnings for those who earn less than a high school diploma are \$17,762, compared to \$24,585 for a high school graduate. Those who graduate from college with a bachelor's degree earn even more – \$36,370.<sup>27</sup>

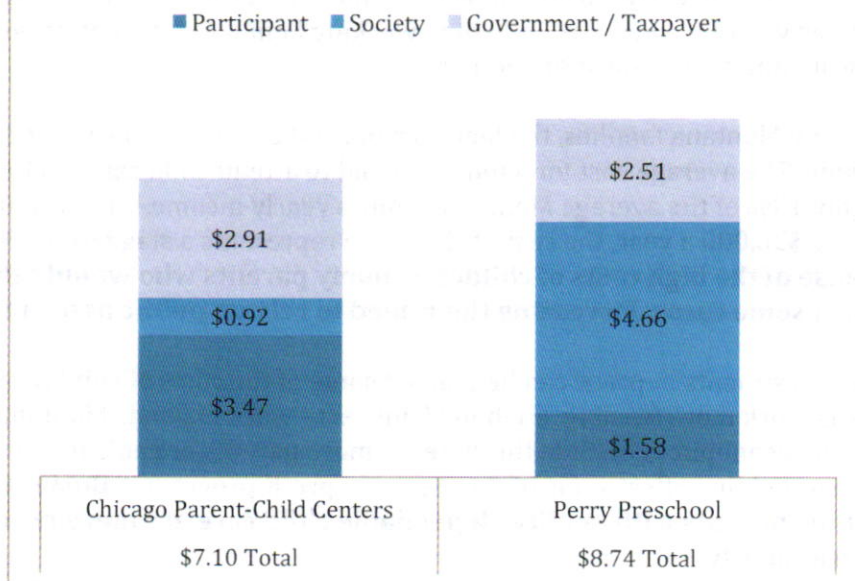
Additionally, unemployment in Montana is higher for those without a high school diploma (12.2 percent) compared to those with a high school degree (6.8 percent), and significantly lower for those who graduate from college (3.3 percent).<sup>28</sup> Every dollar invested in pre-K generated \$3.39 in increased participant earnings and additional tax revenues, according to a study of the Chicago Child-Parent Center Preschool.<sup>29</sup> This increase in earnings and tax revenue accounts for nearly one-third of the total societal benefits of the program.

In addition to an individual's increased earnings, raising Montana's graduation rate benefits the state as a whole. Increased tax revenues from the higher earnings of high school graduates would provide the state with greater resources to meet growing needs for roads, police and firefighters, K-12 schools, and clean water. These tax revenues would help offset the costs of a pre-K program in the future.

### Cost of crime

Raising the graduation rate means fewer people in the criminal justice system. The largest area of cost savings for the state and general public from investing in pre-K is through reduced government spending on criminal justice. Roughly 80 percent of male inmates and 75 percent of female inmates at the Montana State Prison are high school dropouts.<sup>30</sup> In addition to the obvious benefits to kids and families, reducing the size of our criminal population has substantial economic benefits.

**Fig. 1: Where do the savings come from?**  
Return on investment by category for two preschool program studies (in dollars)





Children who attend high quality pre-K are less likely to be arrested, compared to those who did not attend pre-K.<sup>31</sup> In the Perry preschool study, those who did not attend pre-K had twice as many arrests by age 27 as those who attended the preschool.<sup>32</sup>

This reduction in the number of arrests translates to savings for the state and local communities. As found in the multi-decade review of the Perry Pre-School program, investments in pre-K produced \$8.74 in savings for every \$1.00 spent, with approximately two-thirds of these benefits coming from savings from reduced incarceration expenses and costs to victims of crime.<sup>33</sup> The CPC program in Chicago yielded similar results; nearly half of the return on investment from the program was realized through crime-related savings. At a cost of \$8,512 per child, the CPC program produced a return on investment of \$92,220. Of this, \$42,462 originates from crime-related savings.<sup>34</sup>

Montana spends \$185 million per year on corrections. **If Montana reduced the number of its citizens jailed for felonies by 10 percent, the state would save \$18.5 million each year.**<sup>35</sup> Because of substantial possible savings, law enforcement leaders across Montana have enrolled in "Fight Crime: Invest in Kids," a collaborative of public safety officers supporting public investment in pre-K.<sup>36</sup>

#### **Additional cost savings**

The benefits of pre-K translate into a better quality of life for children and cost-savings in a wide range of other areas significant for the well-being of people and society as a whole:

- Better health of children, due to improved access to health screenings, immunization information, and nutrition;<sup>37</sup>
- Lower rates of teen pregnancy;<sup>38</sup>
- Higher contributions to Social Security;<sup>39</sup>
- Reduced dependency on public assistance; and<sup>40</sup>
- Less child abuse and maltreatment.<sup>41</sup>

#### **The demand for quality Pre-K in Montana is great**

Thousands of Montana children would benefit from state-funded pre-K. The demand for early, public pre-school outpaces available slots as virtually all Head Start programs in the state face significant wait lists. Approximately 12,553 four-year-olds resided in the state in 2013.<sup>42</sup> In Montana, approximately 52 percent of children between ages three and five are from families with incomes no more than twice the federal poverty line (ie., a family of four with income of 47,700).<sup>43</sup> In 2012-2013, there were approximately 2,720 four-year-olds enrolled in Head Start and Tribal Head Start in Montana.<sup>44</sup> Although roughly one thousand Montana families received support to pay for privately-run child care, families can only access subsidies when they fall below 150 percent of the federal poverty line (ie., a family of four with income of 35,775).<sup>45</sup>

### Pre-K produces substantial return on investment for Montana's economy

Investing in public pre-K will produce a sizeable jolt to the state's economy. **A full access pre-K program in Montana could produce economic returns of more than \$113 million (per cohort) over the long-term, while a program targeting low-income children would cost less initially but return \$62 million (per cohort).**<sup>46</sup> The National Institute for Early Education Research estimates that a quality pre-K program in Montana would require an investment of approximately \$3,617 per child – the lowest estimate in the country.<sup>47</sup> Table 1 provides the overall economic returns from pre-K programs, at various enrollment and funding levels.<sup>48</sup> Oklahoma provides all children in the state with the opportunity to participate in pre-K, and about 74 percent of four-year-olds are enrolled.<sup>49</sup> Assuming a similar enrollment rate for Montana, the state would need to invest approximately \$26.4 million per year.<sup>50</sup> While a benefit-cost ratio of seven to one established in studies of the Chicago Child-Parent Centers is related to single, small-scale pre-K programs, similar results have been found for Oklahoma's universal pre-K program.<sup>51</sup> Applying this benefit-cost ratio, Montana would experience a return on investment of over \$113 million.<sup>52</sup> If Montana invests in a pre-K program to target low-income children with an enrollment rate of 25 percent, the state will see a return on investment of \$62 million.<sup>53</sup>

**Table 1: Montana will see a significant return from investing in pre-K**

Overall return (to individual participant, the state and society) at various investment levels

	Universal Pre-K 75 percent enrollment	Universal Pre-K 50 percent enrollment	Targeted Pre-K 25 percent enrollment
Number of children participating	7,375	4,917	2,458
Annual cost of program	\$26.7 million	\$17.8 million	\$8.9 million
Return on investment	\$113 million	\$75.3 million	\$62.2 million
Source: Author's calculations based on NIEER			

### Conclusion

Investing in early childhood is important for Montana, not only because it would improve the lives of children and help working families, but because of the significant return on investment for the wider public. Montana's children are a smart investment. State funded pre-K not only strengthens families, but strengthens our economy as well.

<sup>1</sup> W. Steven Barnett, "Getting the Facts Right on Pre-K and the President's Pre-K Proposal," National Institute for Early Education Research, February 2013. <http://www.nieer.org/sites/nieer/files/Getting%20the%20Facts%20Right%20on%20Pre-K.pdf>

<sup>2</sup> W. Steven Barnett, "Getting the Facts Right on Pre-K and the President's Pre-K Proposal," National Institute for Early Education Research, February 2013. <http://www.nieer.org/sites/nieer/files/Getting%20the%20Facts%20Right%20on%20Pre-K.pdf>

<sup>3</sup> W. Steven Barnett, "Getting the Facts Right on Pre-K and the President's Pre-K Proposal," National Institute for Early Education Research, February 2013. <http://www.nieer.org/sites/nieer/files/Getting%20the%20Facts%20Right%20on%20Pre-K.pdf>

<sup>4</sup> W. Steven Barnett, "Getting the Facts Right on Pre-K and the President's Pre-K Proposal," National Institute for Early Education Research, February 2013. <http://www.nieer.org/sites/nieer/files/Getting%20the%20Facts%20Right%20on%20Pre-K.pdf>



- <sup>5</sup> Robert G. Lynch, The Economic Policy Institute, "Enriching Children, Enriching the Nation," 2007, [http://www.epi.org/publication/book\\_enriching/#exec](http://www.epi.org/publication/book_enriching/#exec)
- <sup>6</sup> W. Steven Barnett, Cynthia Lamy, Kwanghee Jung, "The Effects of State Prekindergarten Programs on Young Children's School Readiness in Five States," The National Institute for Early Education Research, Rutgers University, December 2005, <http://nieer.org/resources/research/multistate/fullreport.pdf>
- <sup>7</sup> W. Steven Barnett, "Long -Term Effects of Early Childhood Programs on Cognitive and School Outcomes," The Future of Children, Winter 1995, [http://www.princeton.edu/futureofchildren/publications/docs/05\\_03\\_01.pdf](http://www.princeton.edu/futureofchildren/publications/docs/05_03_01.pdf)
- <sup>8</sup> Julia Isaacs, "Research Brief #1: State Pre-Kindergarten," Brookings Institute Center on Children & Families, September 2008, [http://www.brookings.edu/~media/Research/Files/Papers/2008/9/early%20programs%20isaacs/09\\_early\\_programs\\_brief1.PDF](http://www.brookings.edu/~media/Research/Files/Papers/2008/9/early%20programs%20isaacs/09_early_programs_brief1.PDF)
- <sup>9</sup> W. Steven Barnett, "Getting the Facts Right on Pre-K and the President's Pre-K Proposal," National Institute for Early Education Research, February 2013. <http://www.nieer.org/sites/nieer/files/Getting%20the%20Facts%20Right%20on%20Pre-K.pdf>
- <sup>10</sup> James J. Heckman, "Invest in early childhood development: Reduce deficits, strengthen the economy," <http://heckmanequation.org/content/resource/invest-early-childhood-development-reduce-deficits-strengthen-economy>
- <sup>11</sup> Clive R. Belfield, "Does it Pay to Invest in Preschool for All? Analyzing Return-on-Investment in Three States," National Institute for Early Education Research, <http://nieer.org/resources/research/DoesitPay.pdf>
- <sup>12</sup> Clive R. Belfield, Patrick McEwan, "An Economic Analysis of Investments in Early Childhood Education in Massachusetts," October, 2004. <http://www.recognitionandresponse.org/images/downloads/resources/Economic2/economic%20analysis%20of%20investments-ma.pdf>
- <sup>13</sup> W. Steven Barnett, National Institute for Early Education Research, "Benefits of Preschool for All," January 2006. <http://nieer.org/resources/files/Benefits.pdf>
- <sup>14</sup> Mark W. Lipsey, Kerry G. Hofer, Nianbo Dong, Dale C. Farran, Carol Bilbrey, "Evaluation of the Tennessee Voluntary Prekindergarten Program: Kindergarten and First Grade Follow-Up Results from the Randomized Control Design," August 2013, [http://peabody.vanderbilt.edu/research/pri/projects/by\\_content\\_area/tennessee\\_state\\_pre-k\\_evaluation/TN\\_VPK\\_Evaluation\\_Executive\\_Summary\\_August\\_2013.pdf](http://peabody.vanderbilt.edu/research/pri/projects/by_content_area/tennessee_state_pre-k_evaluation/TN_VPK_Evaluation_Executive_Summary_August_2013.pdf)
- <sup>15</sup> Clive R. Belfield, "The Fiscal Impacts of Universal Pre-K Case Study Analysis for Three States," Invest in Kids Working Group, March 2005. [http://www.recognitionandresponse.org/images/downloads/resources/Economic2/belfield-fiscal\\_impact.pdf](http://www.recognitionandresponse.org/images/downloads/resources/Economic2/belfield-fiscal_impact.pdf)
- <sup>16</sup> Clive R. Belfield, "Does it Pay to Invest in Preschool for All? Analyzing Return-on-Investment in Three States," National Institute for Early Education Research, <http://nieer.org/resources/research/DoesitPay.pdf>
- <sup>17</sup> Montana Budget and Policy Center, "The High Cost of Child Care: State Funding for Pre-K Would Benefit Montana Families," May 2014, <http://www.montanabudget.org/wp-content/uploads/2014/05/HighCostofChildCare.pdf>
- <sup>18</sup> Sarah Jane Glynn, Jane Farrell, and Nancy Wu, "The Importance of Preschool and Child Care for Working Mothers," May 2013, <http://americanprogress.org/issues/education/report/2013/05/08/62519/the-importance-of-preschool-and-child-care-for-working-mothers/>
- <sup>19</sup> Clive R. Belfield, "The Fiscal Impacts of Universal Pre-K Case Study Analysis for Three States," Invest in Kids Working Group, March 2005. [http://www.recognitionandresponse.org/images/downloads/resources/Economic2/belfield-fiscal\\_impact.pdf](http://www.recognitionandresponse.org/images/downloads/resources/Economic2/belfield-fiscal_impact.pdf)
- <sup>20</sup> Charles Bruner, "Many Happy Returns: Three Economic Models that Make the Case for School Readiness," State Early Childhood Policy Technical Assistance Network, December 2004, <http://www.recognitionandresponse.org/images/downloads/resources/Economic2/many%20happy%20returns.pdf>
- <sup>21</sup> Governor's Office of Economic Development, "Investments in Early Childhood," May 2008, [http://www.dphhs.mt.gov/hcsd/childcare/documents/economicimpactstudyfinal\\_002.pdf](http://www.dphhs.mt.gov/hcsd/childcare/documents/economicimpactstudyfinal_002.pdf)
- <sup>22</sup> Governor's Office of Economic Development, "Investments in Early Childhood," May 2008, [http://www.dphhs.mt.gov/hcsd/childcare/documents/economicimpactstudyfinal\\_002.pdf](http://www.dphhs.mt.gov/hcsd/childcare/documents/economicimpactstudyfinal_002.pdf)
- <sup>23</sup> Charles Bruner, "Many Happy Returns: Three Economic Models that Make the Case for School Readiness," State Early Childhood Policy Technical Assistance Network, December 2004, <http://www.recognitionandresponse.org/images/downloads/resources/Economic2/many%20happy%20returns.pdf>
- <sup>24</sup> Governor's Office of Economic Development, "Investments in Early Childhood," May 2008, [http://www.dphhs.mt.gov/hcsd/childcare/documents/economicimpactstudyfinal\\_002.pdf](http://www.dphhs.mt.gov/hcsd/childcare/documents/economicimpactstudyfinal_002.pdf)
- <sup>25</sup> Author calculated percentages from Arthur J. Reynolds, Judy A. Temple, and Dylan L. Robertson, et al. "Age -26 Cost-Benefit Analysis of the Child-Parent Center Early Education Program," 2011, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3817956/> and HighScope Perry Preschool Study, "Lifetime Effects: The HighScope Perry Preschool Study Through Age 40 (2005)," <http://www.highscope.org/content.asp?contentid=219>
- <sup>26</sup> For example, the Chicago Child-Parent Centers study showed that the program reduced high school dropouts by 24 percent. The HighScope Perry Pre-School program resulted in a 25 percent reduction in high school dropouts. Clive R. Belfield, Patrick McEwan, "An Economic Analysis of Investments in Early Childhood Education in Massachusetts," October, 2004.



- <http://www.recognitionandresponse.org/images/downloads/resources/Economic2/economic%20analysis%20of%20investments-ma.pdf>
- <sup>27</sup> U.S. Census Bureau, "Median Earnings in the Past 12 Months (In 2012 Inflation-Adjusted Dollars) By Sex By Educational Attainment for the Population 25 Years and Over," 2008-2012 American Community Survey 5-Year Estimates, 2012, [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_12\\_5YR\\_B20004&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_5YR_B20004&prodType=table)
  - <sup>28</sup> U.S. Census Bureau, "Educational Attainment by Employment Status for Population 25 to 64 Years," 2008-2012 American Community Survey 5-Year Estimates, 2012, [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_12\\_5YR\\_B23006&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_5YR_B23006&prodType=table).
  - <sup>29</sup> Arthur J. Reynolds, Judy A. Temple, and Dylan L. Robertson, et al. "Age -26 Cost-Benefit Analysis of the Child-Parent Center Early Education Program," 2011, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3817956/>
  - <sup>30</sup> Montana Office of Public Instruction, "Graduation and Dropout Report 2013," <http://opi.mt.gov/PDF/Measurement/2013-Graduation-and-Dropout-Report.pdf>
  - <sup>31</sup> W. Steven Barnett, National Institute for Early Education Research, "Benefits of Preschool for All," January 2006. <http://nieer.org/resources/files/Benefits.pdf>
  - <sup>32</sup> W. Steven Barnett, National Institute for Early Education Research, "Benefits of Preschool for All," January 2006. <http://nieer.org/resources/files/Benefits.pdf>
  - <sup>33</sup> Arthur J. Reynolds, Judy A. Temple, and Dylan L. Robertson, et al. "Age -26 Cost-Benefit Analysis of the Child-Parent Center Early Education Program," 2011, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3817956/>
  - <sup>34</sup> Arthur J. Reynolds, Judy A. Temple, and Dylan L. Robertson, et al. "Age -26 Cost-Benefit Analysis of the Child-Parent Center Early Education Program," 2011, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3817956/>
  - <sup>35</sup> Fight Crime: Invest in Kids Montana, "I'm the Guy You Pay Later," 2013, <http://fightcrime.s3.amazonaws.com/wp-content/uploads/MT-Im-the-Guy-Report.pdf>
  - <sup>36</sup> Fight Crime: Invest in Kids, "Montana Law Enforcement Leaders Release Report Showing State-Federal Early Learning Proposal Could Save State \$18.5M Each Year," October 2013, <http://www.fightcrime.org/montana-law-enforcement-leaders-release-report-showing-state-federal-early-learning-proposal-could-save-state-18-5m-each-year/>
  - <sup>37</sup> Clive R. Belfield, "The Fiscal Impacts of Universal Pre-K Case Study Analysis for Three States," Invest in Kids Working Group, March 2005. [http://www.recognitionandresponse.org/images/downloads/resources/Economic2/belfield-fiscal\\_impact.pdf](http://www.recognitionandresponse.org/images/downloads/resources/Economic2/belfield-fiscal_impact.pdf)
  - <sup>38</sup> Clive R. Belfield, Patrick McEwan, "An Economic Analysis of Investments in Early Childhood Education in Massachusetts," October, 2004. <http://www.recognitionandresponse.org/images/downloads/resources/Economic2/economic%20analysis%20of%20investments-ma.pdf>
  - <sup>39</sup> National Institute for Early Education Research, "Are Today's Preschoolers the Cure for What Ails Social Security?" <http://nieer.org/publications/are-today%E2%80%99s-preschoolers-cure-what-ails-social-security>
  - <sup>40</sup> Clive R. Belfield, "The Fiscal Impacts of Universal Pre-K Case Study Analysis for Three States," Invest in Kids Working Group, March 2005. [http://www.recognitionandresponse.org/images/downloads/resources/Economic2/belfield-fiscal\\_impact.pdf](http://www.recognitionandresponse.org/images/downloads/resources/Economic2/belfield-fiscal_impact.pdf)
  - <sup>41</sup> Arthur J. Reynolds, Judy A. Temple, and Dylan L. Robertson, et al. "Age -26 Cost-Benefit Analysis of the Child-Parent Center Early Education Program," 2011, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3817956/>
  - <sup>42</sup> Kids Count Data Center, Child Population by Single Age, 2013. <http://datacenter.kidscount.org/data/tables/100-child-population-by-single-age?loc=1&loct=2#detailed/2/28/false/36,868,867,133,38/42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61/418>
  - <sup>43</sup> National Center for Children in Poverty, "Young Children in Low-Income Families in Montana, by Age, 2012", [http://www.nccp.org/profiles/state\\_profile.php?state=MT&id=8](http://www.nccp.org/profiles/state_profile.php?state=MT&id=8).
  - <sup>44</sup> U.S. Health and Human Services, 2012-2013, Head Start Program Information Report, Region 8 and Region 11, Montana, February 20, 2014, on file with author.
  - <sup>45</sup> Montana Department of Public Health and Human Services, Best Beginnings Child Care Scholarships, <http://www.dphhs.mt.gov/hcsd/childcare/bestbeginnings/index.shtml>.
  - <sup>46</sup> Author's calculations using, W. Steven Barnett, "Getting the Facts Right on Pre-K and the President's Pre-K Proposal," National Institute for Early Education Research, February 2013. <http://www.nieer.org/sites/nieer/files/Getting%20the%20Facts%20Right%20on%20Pre-K.pdf>.
  - <sup>47</sup> National Institute of Early Education Research, The State of Preschool 2013: State Preschool Yearbook, 2013. <http://nieer.org/sites/nieer/files/yearbook2013.pdf>. While NIEER estimates cost of pre-K for Montana at \$3,617 per child, it is worth noting that other states have invested considerably greater levels per child for quality pre-K programs.
  - <sup>48</sup> The enrollment estimates take into consideration those currently attending Head Start. Consistent with other studies of pre-K programs, this report assumes that those enrolled in Head Start will remain in those programs. This report does not factor in those who may be enrolled in quality privately-run child care, because Montana does not collect this data. We would expect a portion of children enrolled in privately-run child care will remain enrolled in those programs. Furthermore, the benefit-cost analysis provided for in this report focuses on those impacts derived from the enrollment of at-risk children. The report



---

calculates the percentage of Montana four-year-olds in families with incomes no more than twice the federal poverty line, and then applies the benefit-cost ratio of \$7-to-\$1 to the proportion of low-income children for enrollment levels at 75 percent and 50 percent, and a lower benefit-cost ratio of \$2.49-to-\$1 for middle-income children enrolling in the program, consistent with benefit-cost ratios established by the Tulsa pre-K program. The enrollment level of 25 percent assumes the program is targeting low-income families, so the benefit-cost ratio is applied to the full 25 percent enrolled. For more information and examples of how assumptions can be applied, see Clive R. Belfield, "The Fiscal Impacts of Universal Pre-K Case Study Analysis for Three States," Invest in Kids Working Group, March 2005.

<sup>49</sup> National Institute of Early Education Research, *The State of Preschool 2013: State Preschool Yearbook*, 2013.

<http://nieer.org/sites/nieer/files/yearbook2013.pdf>

<sup>50</sup> Author's calculations using National Institute of Early Education Research, *The State of Preschool 2013: State Preschool Yearbook*, 2013. <http://nieer.org/sites/nieer/files/yearbook2013.pdf>

<sup>51</sup> Timothy J. Bartik, "From Preschool to Prosperity: The Economic Payoff to Early Childhood Education," W.E. Upjohn Institute for Employment Research, Kalamazoo, Michigan, 2014, <http://www.upjohninst.org/Publications/Titles/FromPreschooltoProsperity>.

<sup>52</sup> Author's calculations using W. Steven Barnett, "Getting the Facts Right on Pre-K and the President's Pre-K Proposal," National Institute for Early Education Research, February 2013, <http://www.nieer.org/sites/nieer/files/Getting%20the%20Facts%20Right%20on%20Pre-K.pdf>. To simplify the analysis, the figures use only one cohort of children, with these impacts counted across the child's lifetime.

<sup>53</sup> Author's calculations using W. Steven Barnett, "Getting the Facts Right on Pre-K and the President's Pre-K Proposal," National Institute for Early Education Research, February 2013. <http://www.nieer.org/sites/nieer/files/Getting%20the%20Facts%20Right%20on%20Pre-K.pdf>.